



General

Guideline Title

Complex regional pain syndrome/reflex sympathetic dystrophy medical treatment guidelines.

Bibliographic Source(s)

Colorado Division of Workers' Compensation. Complex regional pain syndrome/reflex sympathetic dystrophy: medical treatment guidelines. Denver (CO): Colorado Division of Workers' Compensation; 2011 Dec 27. 107 p.

Guideline Status

This is the current release of the guideline.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- [March 22, 2016 – Opioid pain medicines](#) : The U.S. Food and Drug Administration (FDA) is warning about several safety issues with the entire class of opioid pain medicines. These safety risks are potentially harmful interactions with numerous other medications, problems with the adrenal glands, and decreased sex hormone levels. They are requiring changes to the labels of all opioid drugs to warn about these risks.

Recommendations

Major Recommendations

Note from the National Guideline Clearinghouse (NGC): This summary includes the treatment recommendations of the guideline. See the original guideline document for additional information on initial evaluation and diagnostic procedures for patients with complex regional pain syndrome (CRPS)/reflex sympathetic dystrophy and for further descriptions of the therapies discussed below.

Therapeutic Procedures—Non-operative

Non-operative therapeutic rehabilitation is applied to patients with CRPS or sympathetically mediated pain (SMP) who experience chronic and

complex problems of de-conditioning and functional disability. Treatment modalities may be utilized sequentially or concomitantly depending on chronicity and complexity of the problem, and treatment plans should always be based on a diagnosis utilizing appropriate diagnostic procedures.

Before initiation of any therapeutic procedure, the authorized treating physician, employer and insurer must consider these important issues in the care of the injured worker:

- a. Patients undergoing therapeutic procedure(s) should be released or returned to modified or restricted duty during their rehabilitation at the earliest appropriate time. Refer to the section "Return-to-Work" below for detailed information.
- b. Reassessment of the patient's status in terms of functional improvement should be documented after each treatment. If patients are not responding within the recommended time periods, alternative treatment interventions, further diagnostic studies or consultations should be pursued. Continued treatment should be monitored using objective measures such as:
 - Return to work or maintaining work status.
 - Fewer restrictions at work or performing activities of daily living (ADL).
 - Decrease in usage of medications related to the work injury, and
 - Measurable functional gains, such as increased range-of-motion or documented increase in strength.
- c. Clinicians should provide and document education to the patient. No treatment plan is complete without addressing issues of individual and/or group patient education as a means of facilitating self-management of symptoms.
- d. Psychological or psychosocial screening should be performed on all chronic pain patients.

Acupuncture

Acupuncture is recommended for chronic pain patients who are trying to increase function and/or decrease medication usage and have an expressed interest in this modality. Acupuncture is not the same procedure as dry needling for coding purposes; however, some acupuncturists may use acupuncture treatment for myofascial trigger points. Dry needling is performed specifically for myofascial trigger points. Refer to "Trigger Point Injections" below.

Credentialed practitioners with experience in evaluation and treatment of chronic pain patients must perform acupuncture evaluations. The exact mode of action is only partially understood. Western medicine studies suggest that acupuncture stimulates the nervous system at the level of the brain, promotes deep relaxation, and affects the release of neurotransmitters. Acupuncture is commonly used as an alternative or in addition to traditional Western pharmaceuticals. It may be used when pain medication is reduced or not tolerated; as an adjunct to physical rehabilitation, surgical intervention; and/or as part of multidisciplinary treatment to hasten the return of functional activity. Acupuncture must be performed by practitioners with the appropriate credentials in accordance with state and other applicable regulations. Therefore, if not otherwise within their professional scope of practice and licensure, those performing acupuncture must have the appropriate credentials, such as licensed acupuncturist (LAc.), registered acupuncturist (RAc.), or diplomate in acupuncture (Dipl. Ac.).

Acupuncture

Indications include joint pain, joint stiffness, soft tissue pain and inflammation, paresthesia, post-surgical pain relief, muscle spasm, and scar tissue pain.

Acupuncture with Electrical Stimulation

It is indicated to treat chronic pain conditions, radiating pain along a nerve pathway, muscle spasm, inflammation, scar tissue pain, and pain located in multiple sites.

Other Acupuncture Modalities

Acupuncture treatment is based on individual patient needs and therefore treatment may include a combination of procedures to enhance treatment effect. Other procedures may include the use of heat, soft tissue manipulation/massage, and exercise. Refer to "Therapy—Active" and "Therapy—Passive" below for a description of these adjunctive acupuncture modalities and time frames.

Total Time Frames for Acupuncture and Acupuncture with Electrical Stimulation

Refer to the original guideline document for time to produce effect, frequency, and optimum and maximum duration of treatments. Any of the above acupuncture treatments may extend longer if objective functional gains can be documented or when symptomatic benefits facilitate progression in the patient's treatment program. Treatment beyond 15 treatments must be documented with respect to need and ability to facilitate positive symptomatic and functional gains. Such care should be re-evaluated and documented with each series of treatments.

Biofeedback

Indications for biofeedback include individuals who are suffering from musculoskeletal injury where muscle dysfunction or other physiological indicators of excessive or prolonged stress response affects and/or delays recovery. Other applications include training to improve self-management of pain, anxiety, panic, anger or emotional distress, opioid withdrawal, insomnia/sleep disturbance, and other central and autonomic nervous system imbalances. Biofeedback is often utilized for relaxation training. Mental health professionals may also utilize it as a component of psychotherapy, where biofeedback and other behavioral techniques are integrated with psychotherapeutic interventions. Biofeedback is often used in conjunction with physical therapy or medical treatment.

Recognized types of biofeedback include the following:

- a. Electromyogram (EMG): Used for self-management of pain and stress reactions involving muscle tension.
- b. Skin Temperature: Used for self-management of pain and stress reactions, especially vascular headaches.
- c. Respiration Feedback (RFB): Used for self-management of pain and stress reactions via breathing control.
- d. Respiratory Sinus Arrhythmia (RSA): Used for self-management of pain and stress reactions via synchronous control of heart rate and respiration.
- e. Heart Rate Variability (HRV): Used for self-management of stress via managing cardiac reactivity.
- f. Electrodermal Response (EDR): Used for self-management of stress involving palmar sweating or galvanic skin response.
- g. Electroencephalograph (EEG, QEEG): Used for self-management of various psychological states by controlling brainwaves.

The goal in biofeedback treatment is normalizing the physiology to the pre-injury status to the extent possible and involves transfer of learned skills to the workplace and daily life. Candidates for biofeedback therapy or training should be motivated to learn and practice biofeedback and self-regulation techniques. In the course of biofeedback treatment, patient stressors are discussed and self-management strategies are devised. If the patient has not been previously evaluated, a psychological evaluation should be performed prior to beginning biofeedback treatment for chronic pain. The psychological evaluation may reveal cognitive difficulties, belief system conflicts, somatic delusions, secondary gain issues, hypochondriasis, and possible biases in patient self-reports, which can affect biofeedback. Home practice of skills is often helpful for mastery and may be facilitated by the use of home training tapes.

Psychologists or psychiatrists, who provide psycho-physiological therapy which integrates biofeedback with psychotherapy, should be either Biofeedback Certification International Alliance (BCIA) certified or practicing within the scope of their training. All non-licensed health care providers of biofeedback for chronic pain patients must be BCIA certified and shall have their biofeedback treatment plan approved by the authorized treating psychologist or psychiatrist. Biofeedback treatment must be done in conjunction with the patient's psychosocial intervention. Biofeedback may also be provided by health care providers, who follow a set treatment and educational protocol. Such treatment may utilize standardized material or relaxation tapes.

Refer to the original guideline document for time to produce effect, frequency, and optimum and maximum duration of treatment.

Complementary Alternative Medicine (CAM)

While CAM may be performed by a myriad of both licensed and non-licensed health practitioners with training in one or more forms of therapy, credentialed practitioners should be used when available or applicable.

Although CAM practices are diverse and too numerous to list, they can be generally classified into five domains: alternative medical systems, mind-body interventions, biological-based practices, body-based therapy, energy-based practices (see the original guideline document for further discussion).

Methods used to evaluate chronic pain patients for participation in CAM will differ with various approaches and with the training and experience of individual practitioners. A patient may be referred for CAM therapy when the patient's cultural background, religious beliefs, or personal concepts of health suggest that an unconventional medical approach might assist in the patient's recovery or when the physician's experience and clinical judgment support a CAM approach. The patient must demonstrate a high degree of motivation to return to work and improve their functional activity level while participating in therapy. Other more traditional conservative treatments should generally be attempted before referral to CAM. Treatment with CAM requires prior authorization.

Refer to the original guideline document for time to produce effect, frequency, and optimum duration of treatment.

Disturbances of Sleep

Disturbances of sleep are common in chronic pain. Although primary insomnia may accompany pain as an independent co-morbid condition, it more commonly occurs secondary to the pain condition itself. Exacerbations of pain often are accompanied by exacerbations of insomnia; the reverse can also occur.

Sleep apnea may also occur as a primary diagnosis or be caused or exacerbated opioid and hypnotic use. This should be investigated diagnostically (refer to "Medications and Medical Management" below).

Many chronic pain patients develop behavioral habits that exacerbate and maintain sleep disturbances. Excessive time in bed, irregular sleep routine, napping, low activity, and worrying in bed are all maladaptive responses that can arise in the absence of any psychopathology. Relaxation training such as progressive relaxation, biofeedback, mindfulness meditation, or imagery training and other forms of cognitive therapy can reduce dysfunctional beliefs and attitudes about sleep.

There is some evidence that behavioral modification, such as patient education and group or individual counseling with cognitive behavioral therapy can be effective in reversing the effects of insomnia. Cognitive and behavioral interventions should be undertaken before prescribing medication solely for insomnia.

Behavioral modifications (see original guideline document for list) should be trialed before the use of hypnotics. Reinforcing these behaviors may also decrease hypnotic use and overall medication costs. There is some evidence that group cognitive behavioral therapy reduces the severity and daytime consequences of insomnia for at least six months. Melatonin or ramelteon, a longer acting melatonin agonist, may be preferred by some patients and is a reasonable alternative to sedative hypnotics. There is some evidence that ramelteon, while producing a small amount of reduction in sleep latency, does not appreciably increase total sleep time or daytime function.

Injections—Therapeutic

When considering the use of injections in CRPS management, the treating physician must carefully consider the inherent risks and benefits. First, it is understood that these injections are seldom meant to be "curative" and when used for therapeutic purposes they are employed in conjunction with other treatment modalities for maximum benefit.

Second, education of the patient should include the proposed goals of the injections, expected gains, risks or complications, and alternative treatment.

Lastly, reassessment of the patient's status in terms of functional improvement should be documented after each injection and/or series of injections. Any continued use of injections should be monitored using objective measures such as:

- a. Return to work or maintaining work status
- b. Fewer restrictions at work or when performing ADL
- c. Decrease in usage of medications related to the work injury
- d. Measurable functional gains, such as increased range-of-motion or documented increase in strength

Visual analog scales (VAS) provide important subjective data but cannot be used to measure function.

The physician must be aware of the possible placebo effect as well as the long-term effects of injections related to the patient's physical and mental status. Strict adherence to contraindications, both absolute and relative, may prevent potential complications. Subjecting the patient to potential risks, (i.e., needle trauma, infection, nerve injury, or systemic effects of local anesthetics and corticosteroids), must be considered before the patient consents to such procedures.

Sympathetic Injections

Description – Sympathetic injections are generally accepted, well-established procedures. They include stellate ganglion blocks and lumbar sympathetic blocks. Unfortunately, there are no high quality randomized controlled trials in this area. It is recommended that all patients receiving therapeutic blocks participate in an appropriate exercise program that may include a functionally directed rehabilitation program.

Indications – Greater than 50% pain relief and demonstrated functional improvement from previous diagnostic or therapeutic blocks. Range of motion or increased strength are examples of objective gains that can be documented for most CRPS patients.

Special Considerations – Except for Bier blocks, fluoroscopic and/or computed tomographic (CT) guidance during procedures is recommended to document technique and needle placement; an experienced physician should perform the procedure. The physician should participate in ongoing injection training workshops provided by organizations such as the International Spine Intervention Society (ISIS). Physicians should obtain fluoroscopy training and must also have the appropriate training in radiation safety, usually overseen by a radiation safety officer.

Complications – Complications may include transient neurapraxia, nerve injury, inadvertent spinal injection, infection, venous or arterial vertebral puncture, laryngeal paralysis, respiratory arrest, vasovagal effects, as well as permanent neurologic damage.

Contraindications – Absolute contraindications of therapeutic injections include: (a) bacterial infection – systemic or localized to region of injection,

(b) bleeding diatheses, (c) hematological conditions, and (d) possible pregnancy.

Relative Contraindications: Relative contraindications of these injections may include: (a) allergy to contrast or shellfish, (b) poorly controlled diabetes mellitus and/or hypertension.

Drugs affecting coagulation, such as aspirin, non-steroidal anti-inflammatory drugs (NSAIDs) and other anti-platelets or anti-coagulants require restriction from use. Decisions regarding the number of restricted days should be made in consultation with the prescribing physician and other knowledgeable experts.

Treatment Parameters – To be effective as a treatment modality, the patient should be making measurable progress in their rehabilitation program and should be achieving an increasing or sustained duration of relief between blocks. If appropriate outcomes are not achieved, changes in treatment should be undertaken.

Refer to the original guideline document for time to produce effect, frequency, and optimum and maximum duration of treatments.

Trigger Point Injections

May be appropriate when myofascial trigger points are present on examination. They are generally not recommended for CRPS as it is a neuropathic syndrome. Refer to the NGC summary of the Colorado Division of Worker's Compensation [Chronic Pain Disorder Medical Treatment Guidelines](#) for treatment parameters.

Peripheral Nerve Blocks

May be appropriate when peripheral nerve pathology is identified as in CRPS II or for some patients with extremity CRPS I. Refer to the NGC summary of the Colorado Division of Worker's Compensation [Chronic Pain Disorder Medical Treatment Guidelines](#) for treatment parameters.

Other Intravenous (IV) Medications and Regional Blocks

One inadequately powered study found that IV guanethidine blocks are ineffective and a review of lower level literature reveals no advantage for other regional blocks. In addition regional blocks given by the Bier block method have the potential of aggravating CRPS due to the constriction of the extremity required for the procedure. Another inadequately powered study found no advantage from Bier blocks of lidocaine and methylprednisolone. It is unlikely that either type of block provides a significant clinical advantage to the patient, therefore they are not recommended. IV blocks with reserpine, droperidol and atropine are also not recommended due to lack of effect in small studies. A small, inadequately powered study seemed to show a 3 month benefit for bretylium Bier block. IV phentolamine has not been adequately studied. The above treatments are not generally recommended, however in cases where repeat sympathetic blocks are contraindicated or ineffective, Bier blocks (usually alpha sympathetic blocking agent with lidocaine) may be useful when the patient has peripheral findings (CRPS II), and demonstrates functional gains. The number of blocks should not exceed those done for sympathetic blocks and active therapy must be done at the same time.

Continuous Brachial Plexus Infusions

These infusions are not recommended due to possible complications of bleeding, infection, pneumothoracic, phrenic nerve paralysis, lack of literature documenting effectiveness and cost.

Epidural Infusions

These are not recommended.

Ketamine

Ketamine is referenced in "Therapeutic Procedures, Non-Operative, CRPS-Specific Medications" in the original guideline document.

Interdisciplinary Rehabilitation Programs

These are the gold standard of treatment for individuals with chronic pain who have not responded to less intensive modes of treatment. In addition, there are current studies to support the use of pain programs. There is good evidence that interdisciplinary programs which include screening for psychological issues, identification of fear-avoidance beliefs and treatment barriers, and establishment of individual functional and work goals, will improve function and decrease disability. These programs should assess the impact of pain and suffering on the patient's medical, physical, psychological, social, and/or vocational functioning. In general, interdisciplinary programs evaluate and treat multiple and sometimes irreversible conditions, including but not limited to painful musculoskeletal, neurological, and other chronic painful disorders and psychological issues; drug dependence, abuse or addiction; high levels of stress and anxiety; failed surgery; and pre-existing or latent psychopathology. The

number of professions involved in the team in a chronic pain program may vary due to the complexity of the needs of the person served. The Division recommends consideration of referral to an interdisciplinary program within 6 months post-injury in patients with delayed recovery unless successful surgical interventions or other medical and/or psychological treatments complications intervene.

Chronic pain patients need to be treated as outpatients within a continuum of treatment intensity. Outpatient chronic pain programs are available with services provided by a coordinated interdisciplinary team within the same facility (formal) or as coordinated among practices by the authorized treating physician (informal). Formal programs are able to provide coordinated, high intensity level of services and are recommended for most chronic pain patients who have received multiple therapies during acute management.

Patients with addiction problems or high dose opioid or other drugs of abuse use may require inpatient and/or outpatient chemical dependency treatment programs before or in conjunction with other interdisciplinary rehabilitation. Guidelines from the American Society of Addiction Medicine are available and may be consulted relating to the intensity of services required for different classes of patients in order to achieve successful treatment.

Informal interdisciplinary pain programs may be considered for patients who are currently employed, those who cannot attend all day programs, those with language barriers, or those living in areas not offering formal programs. Before treatment has been initiated, the patient, physician, and insurer should agree on treatment approach, methods, and goals. Generally the type of outpatient program needed will depend on the degree of impact the pain has had on the patient's medical, physical, psychological, social and/or vocational functioning.

When referring a patient for formal outpatient interdisciplinary pain rehabilitation, an occupational rehabilitation or an opioid treatment program, the Division recommends the program meets the criteria of the Commission on Accreditation of Rehabilitation Facilities (CARF).

Inpatient pain rehabilitation programs are rarely needed but may be necessary for patients with any of the following conditions: (a) high risk for medical instability; (b) moderate-to-severe impairment of physical/functional status; (c) moderate-to-severe pain behaviors; (d) moderate impairment of cognitive and/or emotional status; (e) dependence on medications from which he or she needs to be withdrawn; and (f) the need for 24-hour supervised nursing.

Whether formal or informal programs, they should be comprised of the following dimensions:

- a. Communication: To ensure positive functional outcomes, communication between the patient, insurer and all professionals involved must be coordinated and consistent. Any exchange of information must be provided to all professionals, including the patient. Care decisions should be communicated to all and should include the family or other support system.
- b. Documentation: Through documentation by all professionals involved and/or discussions with the patient, it should be clear that functional goals are being actively pursued and measured on a regular basis to determine their achievement or need for modification.
- c. Treatment Modalities: Use of modalities may be necessary early in the process to facilitate compliance with and tolerance to therapeutic exercise, physical conditioning, and increasing functional activities. Active treatments should be emphasized over passive treatments. Active treatments should encourage self-coping skills and management of pain, which can be continued independently at home or at work.
- d. Therapeutic Exercise Programs: A therapeutic exercise program should be initiated at the start of any treatment rehabilitation. Such programs should emphasize education, independence, and the importance of an on-going exercise regime.
- e. Return-to-Work: The authorized treating physician should continually evaluate the patient for their potential to return to work. When return-to-work is an option, it may be appropriate to implement a Work Hardening Program (as described in "Return-to-Work" below). For patients currently employed, efforts should be aimed at keeping them employed. Formal rehabilitation programs should provide assistance in creating work profiles. For more specific information regarding return-to-work, refer to "Return-to-Work" below.
- f. Patient Education: Patients with pain need to re-establish a healthy balance in lifestyle. All providers should educate patients on how to overcome barriers to resuming daily activity, including pain management, decreased energy levels, financial constraints, decreased physical ability, and change in family dynamics.
- g. Psychosocial Evaluation and Treatment: Psychosocial evaluation should be initiated, if not previously done. Providers of care should have a thorough understanding of the patient's personality profile; especially if dependency issues are involved. Psychosocial treatment may enhance the patient's ability to participate in pain treatment rehabilitation, manage stress, and increase their problem-solving and self-management skills.
- h. Vocational Assistance: Vocational assistance can define future employment opportunities or assist patients in obtaining future employment. Refer to "Return-to-Work" for detailed information.

Interdisciplinary programs are characterized by a variety of disciplines that participate in the assessment, planning, and/or implementation of the treatment program. These programs are for patients with greater levels of perceived disability, dysfunction, de-conditioning and psychological involvement. Programs should have sufficient personnel to work with the individual in the following areas: behavior, functional, medical, cognitive, pain management, psychological, social and vocational.

Formal Interdisciplinary Rehabilitation Programs

Interdisciplinary Pain Rehabilitation

An Interdisciplinary Pain Rehabilitation Program provides outcomes-focused, coordinated, goal-oriented interdisciplinary team services to measure and improve the functioning of persons with pain and encourage their appropriate use of health care system and services. The program can benefit persons who have limitations that interfere with their physical, psychological, social, and/or vocational functioning. The program shares information about the scope of the services and the outcomes achieved with patients, authorized providers, and insurers.

The interdisciplinary team maintains consistent integration and communication to ensure that all interdisciplinary team members are aware of the plan of care for the patient, are exchanging information, and implement the plan of care. The team members make interdisciplinary team decisions with the patient and then ensure that decisions are communicated to the entire care team.

The Medical Director of the pain program should ideally be board certified in pain management, or be board certified in his or her specialty area and have completed a one year fellowship in interdisciplinary pain medicine or palliative care recognized by a national board, or have two years' experience in an interdisciplinary pain rehabilitation program. Individuals who assist in the accomplishment of functional, physical, psychological, social and vocational goal must include: a medical director, pain team physician(s), and pain team psychologist. Other disciplines on the team may include, but are not limited to: biofeedback therapist, occupational therapist, physical therapist, registered nurse (RN), case manager, exercise physiologist, psychologist, psychiatrist, and/or nutritionist.

Refer to the original guideline document for time to produce effect, frequency, and optimum and maximum duration of programs.

Occupational Rehabilitation

This is an interdisciplinary program addressing a patient's employability and return-to-work. It includes a progressive increase in the number of hours per day that a patient completes work simulation tasks until the patient can tolerate a full workday. A full workday is case specific and is defined by the previous employment of the patient. Safe work place practices and education of the employer and social support system regarding the person's status should be included. This is accomplished by addressing the medical, psychological, behavioral, physical, functional, and vocational components of employability and return-to-work.

The interdisciplinary team should, at a minimum, be comprised of a qualified medical director who is board certified with documented training in occupational rehabilitation, team physicians having experience in occupational rehabilitation, occupational therapy and physical therapy.

As appropriate, the team may also include: chiropractor, RN, case manager, psychologist and vocational specialist or certified biofeedback therapist.

Refer to the original guideline document for time to produce effect, frequency, and optimum and maximum duration of programs.

Informal Interdisciplinary Rehabilitation Program

A coordinated interdisciplinary pain rehabilitation program is one in which the authorized treating physician coordinates all aspects of care. This type of program is similar to the formal programs in that it is goal oriented and provides interdisciplinary rehabilitation services to manage the needs of the patient in the following areas: (a) functional, (b) medical, (c) physical, (d) psychological, (e) social, and (f) vocational.

This program is different from a formal program in that it involves lower frequency and intensity of services/treatment. Informal rehabilitation is geared toward those patients who do not need the intensity of service offered in a formal program or who cannot attend an all-day program due to employment, daycare, language or other barriers.

Patients should be referred to professionals experienced in outpatient treatment of chronic pain. The Division recommends the authorized treating physician consult with physicians experienced in the treatment of chronic pain to develop the plan of care. Communication among care providers regarding clear objective goals and progress toward the goals is essential. Employers should be involved in return to work and work restrictions and the family/social support system should be included in the treatment plan. Other disciplines likely to be involved include biofeedback therapist, occupational therapist, physical therapist, RN, psychologist, case manager, exercise physiologist, psychiatrist, and/or nutritionist.

Refer to the original guideline document for time to produce effect, frequency, and optimum and maximum duration of programs.

Opioid/Chemical Treatment Programs

Chemical dependency, which for worker compensation issues will usually be related to opioids, anxiolytics, or hypnotics as prescribed for the original workers compensation injury, should be treated with specific programs providing medical and psychological assessment, treatment planning and individual as well group counseling and education.

They may be inpatient or outpatient programs, depending upon the level of intensity of services required. Formal treatment programs are appropriate for patients who have more intense (e.g., use extraordinarily excessive doses of prescription drugs to which they have developed tolerance) or multiple drug abuse issues (e.g., benzodiazepines and/or alcohol) and those with complex medical conditions or psychiatric issues drug misuse. A medical physician with appropriate training preferably board certified in addiction medicine, should provide the initial evaluation and oversee the program. Full primary assessment should include behavioral health assessment; medical history; physical examination; mental status; current level of functioning; employment history; legal history; history of abuse, violence, and risk taking behavior; education level; use of alcohol, tobacco and other drugs; and social support system.

Addiction counselors, and other trained health care providers as needed, are involved in the program. Peer and group support is an integral part of the program and families are encouraged to attend. There should be good communication between the program and other external services, external health care providers, Alanon, Alcoholics Anonymous (AA) and pain medicine providers. Drug screening is performed as appropriate for the individual, minimally initially and at least weekly during the initial detoxification and intensive initial treatment.

Clear withdrawal procedures are delineated for voluntary, against medical advice, and involuntary withdrawal. Withdrawal programs must have a clear treatment plan and include description of symptoms of medical and emotional distress, significant signs of opioid withdrawal, and actions taken. All programs should have clear direction on how to deal with violence in order to assure safety for all participants. Transition and discharge should be carefully planned with full communication to outside resources. Duration of inpatient programs are usually 4 weeks while outpatient programs may take 12 weeks.

Drug detoxification may be performed on an outpatient or inpatient basis. Detoxification is unlikely to succeed in isolation when not followed by prolonged chemical dependency treatment. Isolated detoxification is usually doomed to failure with very high recidivism rates.

Neither ultra-rapid nor rapid-detoxification are recommended due to possible respiratory depression and death and the lack of evidence for long range treatment success.

Abstinence models are preferred by most chemical dependency treatment programs but are problematic for those chronic pain patients who may require the continued use of opioid analgesics. Methadone (Dolophine, Methadose), buprenorphine (Subutex), or buprenorphine/naloxone (Suboxone) are usually the first line agents for treating such patients; however, continued use in an outpatient setting of methadone for opioid dependency requires dispensing by a licensed methadone clinic and buprenorphine, for the same purpose, by a physician possessing a special Drug Enforcement Agency (DEA) license. As of the time of this guideline writing, some formulations of buprenorphine/naloxone have been United States Food and Drug Administration (FDA) approved for the treatment of opioid dependence. It is strongly recommended that the use of either drug for the purpose of treating chronic pain be limited to physicians with additional training. In the case of methadone, there are increasing numbers of inadvertent deaths due to misuse, including prescribing errors. In the case of buprenorphine, its use as an analgesic is not currently FDA approved and conversion to this drug from other opioids is difficult. It should never be a first-line analgesic for chronic pain due to high cost and the presence of other opioids that may be more effective for moderate-to-severe chronic pain.

Tapering opioids on an outpatient basis requires a highly motivated patient and diligent treatment team and may be accomplished by decreasing the current dose 10% per day or per week. Tapering should be accompanied by addiction counseling. Failing a trial of tapering a patient should be sent to a formal addiction program. When the dose has reached one third of the original dose, the taper should proceed at half or less of the initial rate. Doses should be held or possibly increased if severe withdrawal symptoms, pain, or reduced treatment failure otherwise occurs. This method is tedious, time consuming and more likely to fail than more rapid and formalized treatment programs.

Refer to the original guideline document for time to produce effect, frequency, and optimum and maximum duration of programs.

Medications and Medical Management

There is no single formula for pharmacological treatment of patients with chronic non-malignant pain. A thorough medication history, including use of alternative and over the counter medications, should be performed at the time of the initial visit and updated periodically. The medication history may consist of evaluating patient refill records through pharmacies to determine if the patient is appropriately taking their prescribed regimen. Appropriate application of pharmacological agents depends on the patient's age, past history (including history of substance abuse), drug allergies and the nature of all medical problems. It is incumbent upon the healthcare provider to thoroughly understand pharmacological principles when dealing with the different drug families, their respective side effects, drug interactions, bioavailability profiles, and primary reason for each medication's usage. Patients should be aware that medications alone are unlikely to provide complete pain relief. In addition to pain relief, a primary goal of drug treatment is to improve the patient's function as measured behaviorally. In addition to taking medications, continuing participation in exercise programs and using self-management techniques such as biofeedback, cognitive behavioral therapy and other individualized physical and psychological practices are essential elements for successful chronic pain management.

Control of chronic non-malignant pain is expected to involve the use of medication. Strategies for pharmacological control of pain cannot be precisely specified in advance. Rather, drug treatment requires close monitoring of the patient's response to therapy, flexibility on the part of the prescriber and a willingness to change treatment when circumstances change. Many of the drugs discussed in the medication section were licensed for indications other than analgesia, but are effective in the control of some types of chronic pain.

It is generally wise to begin management with lower cost medications whose efficacy equals higher cost medications and medications with a greater safety profile. Decisions to progress to more expensive, non-generic, and/or riskier products are made based on the drug profile, patient feedback, and improvement in function. The provider must carefully balance the untoward side effects of the different drugs with therapeutic benefits, as well as monitoring for any drug interactions.

All medications should be given an appropriate trial in order to test for therapeutic effect. The length of an appropriate trial varies widely depending on the individual drug. Certain medications may take several months to determine the efficacy, while others require only a few doses. It is recommended that patients with CRPS be maintained on drugs that have the least serious side effects. For example, patients need to be tried or continued on acetaminophen and/or low dose generic antidepressant medications whenever feasible, as part of their overall treatment for chronic pain. Patients with renal or hepatic disease may need increased dosing intervals with chronic acetaminophen use. Chronic use of NSAIDs is generally not recommended due to increased risk of cardiovascular events and gastrointestinal (GI) bleeding. There is good evidence that naproxen has the least risk for cardiovascular events when compared to other NSAIDs.

Opioid analgesics and other drugs of potential abuse such as sedative hypnotics or benzodiazepines may be used in properly selected cases for CRPS patients, with total elimination desirable whenever clinically feasible. It is strongly recommended that such pharmacological management be monitored or managed by an experienced pain medicine physician. Multimodal therapy is the preferred mode of treatment for chronic pain patients whether or not these drugs were used acutely or sub-acutely.

For CRPS management a burst of oral steroids is usually prescribed initially followed by tricyclics. Bisphosphonates are used when osteotrophic changes are present. Neuropathic pain can be treated with a variety of medications; however, all have specific side effects and other interactions that clinicians must be mindful of. It is suggested that patients with significant peripheral neuropathic pain be trialed with a tricyclic medication initially, as low dose medication in this category frequently is tolerated and performs sufficiently to decrease pain 30% to 50%. When these fail, side effects are not tolerated, or a patient has medical issues precluding the use of this class of drugs, other appropriate medications can be tried. Second line drugs include the anticonvulsants gabapentin (Fanatrex, Gabarone, Gralise, Horizant, Neurontin) and pregabalin (Lyrica). Comparison studies of amitriptyline (Elavil, Endep, Vanatrip) and gabapentin or carbamazepine (Carbatrol, Eptol, Equetro, Tegretol) have shown no appreciable difference between the drugs; thus, there is good evidence that there is little clinical outcome difference between the medications, although gabapentin may be better tolerated. Third line drugs are the serotonin-norepinephrine reuptake inhibitors (SNRIs), which have demonstrated some effectiveness for treating neuropathic pain, and topical lidocaine. The SNRI duloxetine (Cymbalta) has not been shown to be superior to the tricyclic amitriptyline and there is no reason to prefer duloxetine in patients who have not been treated with a tricyclic. Fourth line drugs are opioids and tramadol (Rybix, Ryzolt, Ultram). Other medications have few clinical trials to support them but may be helpful in some patients.

For the clinician to interpret the material on CRPS-specific medications, it should be noted that: (1) drug profiles listed are not complete; (2) dosing of drugs will depend upon the specific drug, especially for off-label use; and (3) not all drugs within each class are listed, and other drugs within the class may be appropriate. Clinicians should refer to informational texts or consult a pharmacist before prescribing unfamiliar medications or when there is a concern regarding drug interactions.

Refer to the original guideline document for additional information on specific medications, including indications, contraindications, side effects, drug interactions, and laboratory monitoring required.

Orthotics/Prosthetics/Equipment

Devices and adaptive equipment are rarely necessary for CRPS patients as motion is to be encouraged. Specific devices may be useful in rare cases to aid in return-to-work duties.

Patient Education

Patients should be educated on their specific injury, assessment findings, and plan of treatment and encouraged to take an active role in establishing functional outcome goals. No treatment plan is complete without addressing issues of individual and/or group patient education as a means of prolonging the beneficial effects of rehabilitation, as well as facilitating self-management of symptoms and prevention of secondary disability.

In some cases, educational intervention combined with exercises may achieve results comparable to surgical intervention for patients who have undergone previous surgery.

Patient education is an interactive process that provides an environment where the patient not only acquires knowledge but also gains an understanding of the application of that knowledge (refer to the original guideline document for specific patient education topics).

Educational efforts should also extend to family and other support persons, the case manager, the insurer, and the employer as indicated to optimize the understanding of the patient and the outcome. Professional translators should be provided for non-English speaking patients to assure optimum communication. All education, teaching, and instruction given to the patient should be documented in the medical record.

Effects of education weaken over time; continuing patient education sessions will be required to maximize the patient's function. The effectiveness of educational efforts can be enhanced through attention to the learning style and receptivity of the patient. Written educational materials may reinforce and prolong the impact of verbal educational efforts. Overall, patient education should emphasize health and wellness, return-to-work and return to a productive life.

Refer to the original guideline document for time to produce effect and frequency of treatment.

Personality/Psychological/Psychosocial/Psychiatric Intervention

Psychosocial treatment is a well-established therapeutic and diagnostic intervention with selected use in acute pain problems, and more widespread use in sub-acute and chronic pain populations. Psychosocial treatment is recommended as an important component in the total management of a patient with CRPS and should be implemented as soon as the problem is identified.

If a diagnosis consistent with the standards of the American Psychiatric Association (APA) Diagnostic Statistical Manual of Mental Disorders (DSM) has been determined, the patient should be evaluated for the potential need for psychiatric medications. Use of any medication to treat a diagnosed condition may be ordered by the authorized treating physician or by the consulting psychiatrist. Visits for management of psychiatric medications are medical in nature and are not a component of psychosocial treatment. Therefore, separate visits for medication management may be necessary, depending upon the patient and medications selected.

Psychosocial interventions include psychotherapeutic treatments for mental health conditions, as well as behavioral medicine treatments for patients without psychiatric conditions, but who may need to make major life changes in order to cope with pain or adjust to disability. Examples of these treatments include cognitive behavioral therapy, relaxation training, mindfulness training, and sleep hygiene training.

In total, the evidence clearly supports cognitive behavioral therapy (CBT) and it should be offered to all chronic pain patients without other serious issues, as discussed above.

CBT is often combined with active therapy in an interdisciplinary program, formal or informal. It must be coordinated with a psychologist or psychiatrist. CBT can be done in a small group or individually and the usual number of treatments varies between 8 and 16 sessions.

Before CBT is done, the patient must have a full psychological evaluation. The CBT program must be done under the supervision of a PhD, PsyD, EdD, or Psychiatric MD/DO.

For all psychological/psychiatric interventions, an assessment and treatment plan with measurable behavioral goals, time frames, and specific interventions planned, must be provided to the treating physician prior to initiating treatment. A status report must be provided to the authorized treating physician every two weeks during initial more frequent treatment and monthly thereafter. The report should provide documentation of progress towards functional recovery and discussion of the psychosocial issues affecting the patient's ability to participate in treatment. The report should also address pertinent issues such as pre-existing, aggravated, and/or causative, as well as project realistic functional prognosis.

Refer to the original guideline document for additional information, including time to produce effect, frequency, and optimum and maximum duration of CBT and other psychological/psychiatric interventions.

Restriction of Activities

Continuation of normal daily activities is the recommendation for CRPS patients since immobility will negatively affect rehabilitation. Prolonged immobility results in a wide range of deleterious effects, such as a reduction in aerobic capacity and conditioning, loss of muscle strength and flexibility, increased segmental stiffness, promotion of bone demineralization, impaired disc nutrition, and the facilitation of the illness role.

Immobility may range from bed rest to the continued use of orthoses, such as cervical collars and lumbar support braces. While these interventions may have been ordered in the acute phase, the provider should be aware of their impact on the patient's ability to adequately comply with and successfully complete rehabilitation. There is strong evidence against the use of bed rest in acute low pain back cases without neurologic symptoms.

Patients should be educated to the detrimental effects of immobility versus the efficacious use of limited rest periods. Adequate rest allows the

patient to comply with active treatment and benefit from the rehabilitation program. In addition, complete work cessation should be avoided, if possible, since it often further aggravates the pain presentation and promotes disability. Modified return-to-work is almost always more efficacious and rarely contraindicated in the vast majority of injured workers with chronic pain.

Return-to-Work

Return-to-work, and/or performance of work-related activities, are one of the major components in chronic pain management and rehabilitation. There is some evidence that an integrated care program including workplace interventions and graded activity teaching that pain need not limit activity is effective in returning patients with chronic low back pain to work, even with minimal reduction of pain. Return-to-work is a subject that should be addressed by each workers' compensation provider at the first meeting with the injured employee, and be updated at each additional visit. A return-to-work format should be part of a company's health plan, knowing that return-to-work can decrease anxiety, reduce the possibility of depression, and reconnect the worker with society.

Because a prolonged period of time off work will decrease the likelihood of return to work, the first weeks of treatment are crucial in preventing and/or reversing chronicity and disability mindset. In complex cases, experienced nurse case managers may be required to assist in return-to-work. Other services, including psychological evaluation and/or treatment, job site analysis, and vocational assistance may be employed.

The following should be considered when attempting to return an injured worker with chronic pain to work.

- a. Job history interview
- b. Coordination of care
- c. Communication
- d. Establishment of a return-to-work status
- e. Establishment of activity level restrictions
- f. Rehabilitation and return-to-work
- g. Vocational assistance

Recommendations to Employers and Employees of Small Businesses

Employees who are diagnosed with chronic pain may not be able to perform any jobs for which openings exist. Temporary employees may fill those slots while the employee functionally improves. Some small businesses hire other workers and if the injured employee returns to the job, the supervisor/owner may have an extra employee. To avoid this, it is suggested that case managers be accessed through the payer or third party administrator. Case managers may assist with resolution of these problems, as well as assist in finding modified job tasks, or find jobs with reduced hours, etc., depending upon company philosophy and employee needs.

Recommendations to Employers and Employees of Mid-sized and Large Businesses

Employers are encouraged by the Division to identify modified work within the company that may be available to injured workers with chronic pain who are returning to work with temporary or permanent restrictions. To assist with temporary or permanent placement of the injured worker, it is suggested that a program be implemented that allows the case manager to access descriptions of all jobs within the organization.

Therapy—Active

The following active therapies are widely used and (unless otherwise noted) accepted methods of care for a variety of work-related injuries. Active therapy is based on the philosophy that therapeutic exercise and/or activity are beneficial for restoring flexibility, strength, endurance, function, range-of-motion, and can alleviate discomfort. All active therapy plans should be made directly with patients in the interest of achieving long-term individualized goals.

Active therapy requires an internal effort by the individual to complete a specific exercise or task. This form of therapy requires supervision from a therapist or medical provider such as verbal, visual, and/or tactile instruction(s). Active therapy is intended to promote independence and self-reliance in managing the physical pain as well as to improve the functional status in regard to the specific diagnosis and general conditioning and well-being. At times, a provider may help stabilize the patient or guide the movement pattern but the energy required to complete the task is predominately executed by the patient. Therapy in this section should not be merely a repeat of previous therapy but should focus specifically on the individual goals and abilities of the patient with CRPS.

The goal of active therapy is to teach the patient exercises that they can perform regularly on their own. Patients should be instructed to continue active therapies at home as an extension of the treatment process in order to maintain improvement levels. Follow-up visits to reinforce and monitor progress and proper technique are recommended. Home exercise can include exercise with or without mechanical assistance or resistance and functional activities with assistive devices.

Since CRPS and SMP patients frequently have additional myofascial pain generators, other active therapies not listed may be used in treatment. Refer to the NGC summary of the Colorado Division of Worker's Compensation [Chronic Pain Disorder Medical Treatment Guidelines](#) for therapies and timeframe parameters not listed. Refer to the original guideline document for a description of the following active therapies including time to produce effect, frequency, and optimum and maximum duration of treatment:

- Activities of daily living (ADL)
- Aquatic therapy
- Functional activities
- Gait training
- Mirror therapy-graded motor imagery
- Neuromuscular re-education
- Stress loading
- Therapeutic exercise
- Work conditioning
- Work simulation

Therapy—Passive

Most of the following passive therapies and modalities are generally accepted methods (unless otherwise noted) of care for a variety of work-related injuries. Passive therapy includes those treatment modalities that do not require energy expenditure on the part of the patient. They are principally effective during the early phases of treatment and are directed at controlling symptoms such as pain, inflammation and swelling and to improve the rate of healing soft tissue injuries. They should be used adjunctively with active therapies such as postural stabilization and exercise programs to help control swelling, pain, and inflammation during the active rehabilitation process. Please refer to Section B. 4. General Guideline Principles, Active Interventions in the original guideline document. Passive therapies may be used intermittently as a therapist deems appropriate or regularly if there are specific goals with objectively measured functional improvements during treatment. Or if there are episodes of acute pain superimposed upon a chronic pain problem.

On occasion, specific diagnoses and post-surgical conditions may warrant durations of treatment beyond those listed as "maximum." Factors such as exacerbation of symptoms, re-injury, interrupted continuity of care and co-morbidities may extend durations of care. Having specific goals with objectively measured functional improvement during treatment can support extended durations of care. It is recommended that if after 6 to 8 visits no treatment effect is observed, alternative treatment interventions, further diagnostic studies or further consultations should be pursued.

Refer to the original guideline document for a description of the following passive therapies including time to produce effect, frequency, and optimum and maximum duration of treatment:

- Continuous passive motion (CPM)
- Fluidotherapy
- Paraffin bath
- Desensitization
- Superficial heat therapy

Therapeutic Procedures—Operative

When considering operative intervention in CRPS management, the treating physician must carefully consider the inherent risk and benefit of the procedure. All operative intervention should be based on a positive correlation with clinical findings, the clinical course, and diagnostic tests. A comprehensive assessment of these factors should have led to a specific diagnosis with positive identification of the pathologic condition. Operative treatment is indicated when the natural history of surgically treated lesions is better than the natural history for non-operatively treated lesions.

Surgical procedures are seldom meant to be curative and would be employed in conjunction with other treatment modalities for maximum functional benefit. Functional benefit should be objectively measured and includes the following:

- a. Return-to-work or maintaining work status
- b. Fewer restrictions at work or performing activities of daily living
- c. Decrease in usage of medications prescribed for the work-related injury
- d. Measurable functional gains, such as increased range of motion (ROM) or a documented increase in strength

Education of the patient should include the proposed goals of the surgery, expected gains, risks or complications, and alternative treatment.

Smoking may affect soft tissue healing through tissue hypoxia. Patients should be strongly encouraged to stop smoking and be provided with appropriate counseling by the physician. If a treating physician recommends a specific smoking cessation program peri-operatively, this should be covered by the insurer. Physicians may monitor smoking cessation with laboratory tests such as cotinine levels. The surgeon will make the final determination as to whether smoking cessation is required prior to surgery.

Prior to surgical intervention, the patient and treating physician should identify functional operative goals and the likelihood of achieving improved ability to perform activities of daily living or work activities and the patient should agree to comply with the pre- and post-operative treatment plan including home exercise. The provider should be especially careful to make sure the patient understands the amount of post-operative therapy required and the length of partial- and full-disability expected post-operatively.

Neurostimulation

Spinal cord stimulation (SCS) is the delivery of low-voltage electrical stimulation to the spinal cord or peripheral nerves to inhibit or block the sensation of pain. The system uses implanted electrical leads and a battery powered implanted pulse generator.

It is particularly important that patients meet all of the indications before a permanent neurostimulator is placed because some literature has shown that workers' compensation patients are less likely to gain significant relief than other patients. As of the time of this guideline writing, SCS devices have been FDA approved as an aid to in the management of chronic intractable pain of the trunk and/or limbs, including unilateral and bilateral pain associated with the following: failed back surgery syndrome, intractable low back pain and leg pain.

Refer to Section F. 3, Diagnostic Components of Confirmed CRPS, in the original guideline document for the definition of confirmed CRPS which requires two positive diagnostic tests.

While there is no evidence demonstrating effectiveness for use of SCS with for CRPS II, it is generally accepted that SCS can be used for patients who have this condition. SCS may be most effective in patients with CRPS I or II who have not achieved relief with oral medications, rehabilitation therapy, or therapeutic nerve blocks, and in whom the pain has persisted for longer than 6 months.

Particular technical expertise is required to perform this procedure and is available in some neurosurgical, rehabilitation, and anesthesiology training programs and fellowships. Physicians performing this procedure must be trained in neurostimulation implantation and participate in ongoing training workshops on this subject, such as those sponsored by the ISIS or as sponsored by implant manufacturers. Surgical procedures should be performed by surgeons, usually with a neurosurgical or spinal background.

Refer to the original guideline document for further information on complications, surgical indications including patient criteria for neurostimulation, contraindications, operative treatment, post-operative considerations, and post-operative therapy.

Peripheral Nerve Stimulation

There are no randomized controlled studies for this treatment. This modality should only be employed with a clear nerve injury or when the majority of pain is clearly in a nerve distribution in patients who have completed 6 months of other appropriate therapy including pre-trial psychosocial evaluation and treatment. A screening trial should take place over 3 to 7 days and is considered successful if the patient meets both of the following criteria: (a) experiences a 50% decrease in pain, which may be confirmed by VAS or Numerical Rating Score (NRS) and (b) demonstrates objective functional gains or decreased utilization of pain medications. Objective, measurable, functional gains should be evaluated by an occupational therapist and/or physical therapist and the primary treating physician prior to and before discontinuation of the trial. It may be used for proven occipital, ulnar, median and other isolated nerve injuries.

Intrathecal Drug Delivery

Not generally recommended. Requires prior authorization. Due to conflicting studies in this population and complication rate for long-term use, it may be considered only in very rare occasions when dystonia and spasticity are dominant features or when pain is not able to be managed using any other non-operative treatment. As of the time of this guideline writing, specific brands of infusion systems have been FDA approved for the following: chronic intraspinal (epidural and intrathecal) infusion of preservative-free morphine sulfate sterile solution in the treatment of chronic intractable pain, chronic infusion of preservative-free ziconotide sterile solution for the management of severe chronic pain, and chronic intrathecal infusion of baclofen for the management of severe spasticity. Refer to the original guideline document for complications, indications, and contraindications of this therapy.

Sympathectomy Including Use of Phenol or Radiofrequency

This procedure is generally not recommended and requires prior authorization. It may be considered for patients who are unable to return to normal activities of daily living when using the other non-operative treatments (as listed in "Therapeutic Procedures—Non-operative" above) and

who meet the strict indications.

Indications – Single extremity CRPS-I with a significant amount of sympathetically mediated ischemia and distal pain only. The procedure should not be done if the proximal extremity is involved. Local anesthetic stellate ganglion block or lumbar sympathetic block consistently gives 90 to 100 percent relief each time a technically good block is performed and results in a temperature difference between the affected and the unaffected extremity of at least 1 degree Celsius. The procedure may be considered for individuals who have limited duration of relief from blocks. Permanent neurological complications are common.

Amputation

Amputation is not recommended in CRPS except in cases of gangrene.

Maintenance Management

Successful management of chronic pain conditions results in fewer relapses requiring intense medical care. Failure to address long-term management as part of the overall treatment program may lead to higher costs and greater dependence on the health care system. Management of CRPS continues after the patient has met the definition of maximum medical improvement (MMI). MMI is declared when a patient's condition has plateaued and the authorized treating physician believes no further medical intervention is likely to result in improved function. When the patient has reached MMI, a physician must describe in detail the maintenance treatment.

Maintenance care in CRPS requires a close working relationship between the carrier, the providers, and the patient. Providers and patients have an obligation to design a cost-effective, medically appropriate program that is predictable and allows the carrier to set aside appropriate reserves. Carriers and adjusters have an obligation to assure that medical providers can design medically appropriate programs. A designated primary physician for maintenance team management is recommended.

Maintenance care will be based on principles of patient self-management. When developing a maintenance plan of care, the patient, physician and insurer should attempt to meet the following goals:

- a. Maximal independence will be achieved through the use of home exercise programs or exercise programs requiring special facilities (e.g., pool, health club) and educational programs.
- b. Modalities will emphasize self-management and self-applied treatment.
- c. Management of pain or injury exacerbations will emphasize initiation of active therapy techniques and may occasionally require anesthetic injection blocks.
- d. Dependence on treatment provided by practitioners other than the authorized treating physician will be minimized.
- e. Periodic reassessment of the patient's condition will occur as appropriate.
- f. Patients will understand that failure to comply with the elements of the self-management program or therapeutic plan of care may affect consideration of other interventions.

Home Exercise Programs and Exercise Equipment

Most patients have the ability to participate in a home exercise program after completion of a supervised exercise rehabilitation program. Programs should incorporate an exercise prescription including the continuation of an age-adjusted and diagnosis-specific program for aerobic conditioning, flexibility, stabilization, and strength. Some patients may benefit from the purchase or rental of equipment to maintain a home exercise program. Determination for the need of home equipment should be based on medical necessity to maintain MMI, compliance with an independent exercise program, and reasonable cost. Before the purchase or long-term rental of equipment, the patient should be able to demonstrate the proper use and effectiveness of the equipment. Effectiveness of equipment should be evaluated on its ability to improve or maintain functional areas related to activities of daily living or work activity. Home exercise programs are most effective when done 3 to 5 times a week. Prior to purchasing the equipment a therapist and/or exercise specialist who has treated the patient should visit a facility with the patient to assure proper use of the equipment. Occasionally, compliance evaluations may be made through a 4 week membership at a facility offering similar equipment.

Exercise Programs Requiring Special Facilities

Some patients may have higher compliance with an independent exercise program at a health club versus participation in a home program. All exercise programs completed through a health club facility should focus on the same parameters of an age-adjusted and diagnosis-specific program for aerobic conditioning, flexibility, stabilization, and strength. Prior to purchasing a membership, a therapist and/or exercise specialist who has treated the patient should visit a facility with the patient to assure proper use of the equipment. Selection of health club facilities should be limited to those able to track attendance and utilization, and provide records available for physician and insurer review.

Refer to the original guideline document for frequency and maximum maintenance duration.

Patient Education Management

Educational classes, sessions, or programs may be necessary to reinforce self-management techniques. This may be performed as formal or informal programs, either group or individual.

Refer to the original guideline document for maintenance duration.

Psychological Management

An ideal maintenance program will emphasize management options implemented in the following order: (a) individual self-management (pain control, relaxation and stress management, etc.), (b) group counseling, (c) individual counseling by a psychologist or psychiatrist, and (d) inpatient treatment. Exacerbation of the injury may require psychological treatment to restore the patient to baseline. In those cases, use treatments and timeframe parameters listed in the Biofeedback and Psychological Evaluation or Intervention sections above.

Refer to the original guideline document for maintenance duration. In cases of significant exacerbation, refer to the psychological treatment section in "Therapeutic Procedures—Non-operative," above.

Non-opioid Medication Management

In some cases, self-management of pain and injury exacerbations can be handled with medications, such as those listed in the Medication section. Physicians must follow patients who are on any chronic medication or prescription regimen for efficacy and side effects. Laboratory or other testing may be appropriate to monitor medication effects on organ function.

Refer to the original guideline document for frequency, maintenance duration, and monitoring.

Vitamin C

There is some evidence that vitamin C 500 mg taken for 50 days after a wrist fracture may help to prevent CRPS. It may be useful to prescribe vitamin C to patients who historically have had or currently have CRPS if they suffer a fracture in order to prevent exacerbation of CRPS.

Opioid Medication Management

As compared with other painful conditions there may be a role for chronic augmentation of the maintenance program with opioid medications. In selected cases, scheduled medications may prove to be the most cost effective means of insuring the highest function and quality of life; however, inappropriate selection of these patients may result in a high degree of iatrogenic illness. A patient should have met the criteria in the opioids section of these guidelines before beginning maintenance opioids. Laboratory or other testing may be appropriate to monitor medication effects on organ function. The following management is suggested for maintenance opioids:

- a. The medications should be clearly linked to improvement of function, not just pain control. All follow-up visits should document the patient's ability to perform routine functions satisfactorily. Examples include the abilities to perform work tasks, drive safely, pay bills or perform basic math operations, remain alert and upright for 10 hours per day, or participate in normal family and social activities. If the patient is not maintaining reasonable levels of activity the patient should usually be tapered from the opioid and tried on a different long-acting opioid.
- b. A low dose opioid medication regimen should be defined, which may minimally increase or decrease over time. Dosages will need to be adjusted based on side effects of the medication and objective function of the patient. A patient may frequently be maintained on additional non-opioid medications to control side effects, treat mood disorders, or control neuropathic pain; however, only one long-acting opioid and one short-acting opioid for rescue use should be prescribed in most cases. Buccally absorbed opioids are not appropriate for these non-malignant pain patients. Transdermal medication use is generally not recommended.
- c. All patients on chronic opioid medication dosages need to sign an appropriate opioid contract with their physician for prescribing the opioids.
- d. The patient must understand that continuation of the medication is contingent on their cooperation with the maintenance program. Use of non-prescribed drugs may result in tapering of the medication. The clinician should order random drug testing at least annually and when deemed appropriate to monitor medication compliance.
- e. Patients on chronic opioid medication dosages must receive them through one prescribing physician.

Refer to the original guideline document for maintenance duration.

Therapy Management

Some treatment may be helpful on a continued basis during maintenance care if the therapy maintains objective function and decreases medication use. With good management, exacerbations should be uncommon; not exceeding two times per year and using minimal or no treatment modality

beyond self-management. On occasion, exacerbated conditions may warrant durations of treatment beyond those listed below. Having specific goals with objectively measured functional improvement during treatment can support extended durations of care. It is recommended that if after 6 to 8 visits no treatment effect is observed, alternative treatment interventions should be pursued.

Refer to the original guideline document for maintenance duration for active therapy, acupuncture, or manipulation.

Injection Therapy

Sympathetic Blocks

These injections are considered appropriate if they increase function for a minimum of 4 to 8 weeks. Maintenance blocks are combined with and enhanced by the appropriate neuro-pharmacological medication(s) and an active self-management exercise program. It is anticipated that the frequency of the maintenance blocks may increase in the cold winter months or with stress.

Refer to the original guideline document for maintenance duration.

Trigger Point Injections

These injections may occasionally be necessary to maintain function in those with myofascial problems. They are generally not recommended for CRPS as it is a neuropathic syndrome. Refer to the NGC summary of the Colorado Division of Worker's Compensation [Chronic Pain Disorder Medical Treatment Guidelines](#) for treatment parameters.

Refer to the original guideline document for maintenance duration.

Purchase or Rental of Durable Medical Equipment

It is recognized that some patients may require ongoing use of self-directed modalities for the purpose of maintaining function and/or analgesic effect. Purchase or rental of modality based equipment should be done only if the assessment by the physician and/or therapist has determined the effectiveness, compliance, and improved or maintained function by its application. It is generally felt that large expense purchases such as spas, whirlpools, and special mattresses are not necessary to maintain function beyond the areas listed above.

Refer to the original guideline document for maintenance duration.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Complex regional pain syndrome (CRPS), formerly known as reflex sympathetic dystrophy

Guideline Category

Counseling

Management

Treatment

Clinical Specialty

Family Practice

Internal Medicine

Neurological Surgery

Neurology

Physical Medicine and Rehabilitation

Psychiatry

Psychology

Rheumatology

Surgery

Intended Users

Advanced Practice Nurses

Chiropractors

Health Care Providers

Health Plans

Hospitals

Managed Care Organizations

Nurses

Occupational Therapists

Patients

Physical Therapists

Physician Assistants

Physicians

Psychologists/Non-physician Behavioral Health Clinicians

Public Health Departments

Substance Use Disorders Treatment Providers

Utilization Management

Guideline Objective(s)

To provide advisory and educational guidelines for the treatment of complex regional pain syndrome/reflex sympathetic dystrophy that are enforceable under the Colorado Workers' Compensation Rules of Procedure

Target Population

Patients with complex regional pain syndrome (formerly called reflex sympathetic dystrophy) who qualify for treatment under Colorado's Workers' Compensation Act as an injured worker

Interventions and Practices Considered

Non-operative Therapeutic Procedures*

1. Acupuncture
2. Biofeedback
3. Complementary and alternative medicine
4. Treatment of sleep disturbances
5. Therapeutic injections
 - Sympathetic injections
 - Trigger point injections
 - Peripheral nerve blocks
 - Other intravenous medications and regional blocks
 - Continuous brachial plexus infusions (not recommended)
 - Epidural infusion (not recommended)
6. Interdisciplinary rehabilitation programs (formal and informal)
7. Opioid/chemical treatment programs
8. Medications and medical management
 - Complex regional pain syndrome (CRPS)-specific medications (ketamine hydrochloride injections and calcitonin not recommended)
 - Alpha-acting agents
 - Anticonvulsants
 - Antidepressants
 - Hypnotics and sedatives
 - Marijuana (not recommended per federal law)
 - Nonsteroidal anti-inflammatory drugs (NSAIDs)
 - Opioids
 - Skeletal muscle relaxants
 - Topical drug delivery
 - Tramadol
9. Orthotics/prosthetics equipment
10. Patient education
11. Personality/psychological/psychosocial/psychiatric interventions
12. Restriction of activities
13. Return to work
 - Job history interview
 - Coordination of care
 - Communication
 - Establishment of a return-to-work status
 - Establishment of activity level restrictions
 - Rehabilitation and return to work
 - Vocational assistance
14. Active therapy
 - Activities of daily living (ADL)
 - Aquatic therapy
 - Functional activities
 - Gait training
 - Mirror therapy-graded motor imagery
 - Neuromuscular re-education
 - Therapeutic exercise
 - Work conditioning
 - Work simulation
15. Passive therapy
 - Continuous passive motion (CPM)
 - Fluidotherapy
 - Paraffin bath
 - Desensitization
 - Superficial heat therapy

Operative Therapeutic Procedures*

1. Neurostimulation
2. Peripheral nerve stimulation
3. Intrathecal drug delivery
4. Sympathectomy
5. Amputation

Maintenance Management

1. Home exercise programs and exercise equipment
2. Exercise programs requiring special facilities
3. Patient education management
4. Psychological management
5. Non-opioid medication management
6. Vitamin C
7. Opioid medication management
8. Therapy management
9. Injection therapy
 - Sympathetic blocks
 - Trigger point injections
10. Purchase or rental of durable medical equipment

*Note: See the "Major Recommendations" field and the original guideline document. Not all of the listed interventions and practices are recommended routinely or generally.

Major Outcomes Considered

- Functional improvement (time to return to work, ability to return to original job, etc.)
- Change in pain scores (visual analogue scale, Oswestry Disability score, etc.)
- Duration of therapeutic effect
- Time to recovery
- Relapse rate
- Side effects or complications

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

General Literature Search Strategy

Studies were identified through the electronic database of PubMed (with specified search topics), and related links from articles identified by searches. For some articles, Web of Science, a literature citation database, was used when it was desirable to find literature that cited a particular article. Relevant evidence statements from Cochrane and British Medical Journal (BMJ) Clinical Evidence were reviewed. Selected guidelines/systematic reviews were also reviewed. The reference lists from other literature and tables of contents from related journals were

scanned for relevant articles. Suggestions from various volunteer advisory bodies to the Division of Workers' Compensation were solicited.

Literature reviewed was in English. Literature searches were limited according to study type and human adults. Only randomized controlled trials or meta-analyses were used for evidence statements regarding treatment. Diagnostic accuracy studies were critiqued for diagnostic testing evidence and cohort, cross-sectional and case-control studies were critiqued for causation evidence statements. Literature which did not meet requirements for evidence statements could be referenced if it furnished useful background information or described interventions which are considered generally accepted by a consensus of health care providers. This information sometimes contributed to consensus decisions by the multi-disciplinary task force drafting the guidelines. Literature that was determined to be unrelated to the clinical issue, or which had such poor quality on initial review that it could not qualify for evidence nor provide meaningful input was not critiqued. All articles sent by the public were formally reviewed.

Specific Search Strategy

All searches were done on PubMed, with Chronic Noncancer Pain as the constant search term and randomized controlled trial (RCT) as the limiting search element. The literature search included articles published from 2001 to 2010, with some searches incorporating a broader range of dates to address input from stakeholders. The search was conducted between August 2010 and November 2011 concurrently with the search strategy on the Chronic Pain Disorder Medical Treatment Guidelines.

Search terms for the search of the PubMed collections were: Anticonvulsant drugs, Pregabalin, Gabapentin, Mexiletene, Intrathecal catheter, Dorsal root entry zone, Deep brain stimulation, Spinal cord stimulation, Adjuvant analgesics, Morphine, Hydrocodone, Oxycodone, Fentanyl, Oxymorphone, Codeine, Methadone, Acupuncture, Dronabinol, Ketamine, Tapentadol, Amitriptyline, Duloxetine, Harpagoside, Tizanidine, Zonisamide, Topiramate, Dextromethorphan, Methylaltraxone, Ziconotide, Lidocaine, Cannabinoid, Hypnosis, Motor cortex stimulation, TENS, PENS, Electrical stimulation, Interdisciplinary rehabilitation, Multidisciplinary rehabilitation, Biofeedback, Osteopathic manipulation, Chiropractic manipulation, Traction, Hypnotic drugs, Yoga, Massage, Cognitive behavioral therapy, Botulinum toxin, NSAID, Iontophoresis, Exercise, Capsaicin, Lamotrigine, Tramadol, Vitamin D, Tricyclic antidepressant, SSRI antidepressant, SNRI antidepressant, Topical analgesia, Trigger point injection, Low level laser, Methylene blue, Radiofrequency neurotomy, Nerve block, Intravenous immunoglobulin, IV regional block, Tumor necrosis factor alpha blockers, Stellate ganglion block, Intrathecal injection, Mirror box therapy, Sympathectomy, Bretylium, Guanethidine, Ketanserin, Clonidine, Clodronate, Bisphosphonates, Calcitonin, IV Ketamine, Topical analgesia.

Medical Literature Review

Articles were selected for review based on relevance and informativeness after viewing their titles and abstracts.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Subjective Review

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Grading of Systematic Reviews and Meta-Analyses*

Criterion	Green	Yellow	Red	Comment
The study is in fact identified as a systematic review or meta-analysis	"Systematic review," "meta-analysis," or both, are in the title of the article, and the abstract supports the design in the title	The title is ambiguous, but the abstract shows that the authors did a systematic review	The article is a narrative review or an overview, or is done by a single author	"Systematic review" and "meta-analysis" are generally recognized terms for a specific type of original research; narrative reviews are subject to biases which

Criterion	Green	Yellow	Red	Comment
				systematic reviews and meta-analyses methodically control for
Objectives of the systematic review or meta-analysis	Clearly stated in terms of PICOS: Patient population (disease, age, setting), Intervention (dose, frequency, etc.), Comparator (control group interventions), Outcome (morbidity, mortality, symptoms, function), and Study design (randomized trials only, broader design criteria)	PICOS elements all reported, but some ambiguity in some elements (e.g., Comparator described as "standard care" or "usual care" without further description)	One or more PICOS element missing or uninterpretable	The question being addressed should be clear from the abstract; it may be narrow or broad, but the scope and potential applicability should be well defined
Characteristics of eligible studies	In addition to PICOS, study characteristics defined in terms of restrictions for inclusion (e.g., minimum length of follow-up, whether co-interventions are included), and scope of reports (language, years of publication, unpublished material)	Ambiguity exists for some of the characteristics of eligible studies	Eligibility of studies is unclear, and scope of reports is not specified	None
Information sources	Multiple information sources are clearly specified: databases (PubMed, Ovid, EMBASE, Cochrane, Web of Science), hand searches of tables of contents of relevant journals, meeting abstracts, reference lists, contacts with authors, manufacturers, trial registries)	Search limited to published material from two or more sources, without additional searching of registries or contact with authors	Search limited to a single information source (e.g., PubMed only)	While PubMed is a large and nearly comprehensive database, its yield can be influenced by how articles are indexed by the National Library of Medicine; additional sources of information can materially affect the conclusions of a systematic review or meta-analysis
Search strategy	Full electronic search strategy for at least one major database, with dates (e.g., PubMed 1970-October 2009), limits, combinations of search terms, such that it can be replicated by the reader	Databases and search terms are given, but there is some ambiguity in the strategy (e.g., PubMed "through 2007"), and replication by the reader would be difficult	Databases and search terms are too broad and vague to permit replication by the reader	Often given in an appendix to the article or in an online supplement, the strategy should be readily accessible
Study selection	Specification of which criteria determine eligibility for inclusion (e.g., randomization to specified interventions, which outcomes were required to be reported) and for quality (e.g., allocation concealment, intention-to-treat analysis, blinding) with at least two reviewers identified by initials; inter-rater agreement and methods of resolving disagreement are specified; a flow diagram enumerates articles retrieved from search, articles excluded after screening, and articles included for meta-analysis	Two or more reviewers screen articles for inclusion, but there is some ambiguity in the criteria for inclusion or for inter-rater agreement and methods of resolving disagreement; flow	Only one reviewer selects studies; criteria are vague	Quality assessment should focus on risk of bias; scoring of articles for quality is not necessary and may be misleading. There is no standard process for selecting studies, but the process used by the reviewers should be clear enough to allow the reader to determine which studies might meet the test of

Criterion Outcomes for analysis	Green Meta-analysis is restricted to pre-specified primary and secondary outcomes, and exploratory (hypothesis-generating) analyses in the source literature are excluded from meta-analysis	Yellow diagram is lacking Meta-analysis combines pre-specified primary and secondary outcomes in the source literature with exploratory analyses in the same literature, but assigns exploratory analyses a lower weight	Red Meta-analysis treats exploratory analyses in source literature on an equal basis with the pre-specified primary and secondary analyses	inclusion Comment Exploratory analyses are too likely to be reported when they arise from the play of chance, and should not be included in any meta-analysis of the same outcomes; their inclusion is likely to bias the meta-analysis
Summary measures for meta-analysis with or without pooled Number Needed to Treat (NNT)	Principal summary measures (relative risk, risk difference, odds ratio, difference in means, hazard ratio) are specified and appropriate to the outcome measure; if NNT are reported, there is a fixed event rate in the control groups for the studies being combined	Risk ratios or odds ratios are reported, and NNT is not reported if there is a difference in the control group event rates across the different studies	Risk ratios or odds ratios are reported, but NNT is reported even when there is a difference in control group event rates across the different studies (the underlying baseline risks are not equal)	Relative risks and odds ratios are generally more stable for summary measures than risk differences; pooled NNT is misleading if the control group event rate (the baseline risk) is different across studies, even if the risk ratio is the same
Meta-analysis presentation	Results of meta-analysis are presented as an estimated summary effect (with confidence interval) across all included studies, displaying a forest plot with weights and confidence intervals for the included studies; a measure of heterogeneity is presented (e.g., I^2); the choice of fixed effect or random effects model is explained, and, if there is significant heterogeneity, there is an attempt to examine possible sources of heterogeneity	Estimated summary effect with confidence interval, with an estimate of heterogeneity, and an explanation of the choice of fixed or random effects model; however, an examination of sources of heterogeneity is lacking	Summary effect measure with confidence interval, but heterogeneity measures and examinations are lacking	No hard and fast rule dictates the choice of model, but because a fixed effect model assumes a single common effect size across studies, there should be a discussion of why it is appropriate for the included studies

*See the [Colorado Division of Workers' Compensation Web site](#) for rating schemes for randomized controlled trials and accuracy of tests to rule out disease.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Medical Literature Review

Published journal articles were selected to be critiqued by the Research Methodologist prior to distribution. Unpublished articles or office handouts submitted by Task Force members or the public were reviewed and critiqued by the Medical Director and Research Methodologist, who then communicated directly with the submitting individual regarding quality and relevance. The submitting individual retained the prerogative of distributing the material to the Task Force. Other unspecified material and public commentary received or solicited by the Division was reviewed and critiqued, as appropriate, and distributed at the discretion of the Medical Director and Medical Policy staff. Many articles were included in the bibliography without critiques or assessment for evidence. These articles were considered to provide pertinent information whether or not they lent themselves to formal evaluation for levels of evidence.

Methods Used to Formulate the Recommendations

Expert Consensus

Other

Description of Methods Used to Formulate the Recommendations

Guidelines Updating Process

The State of Colorado Division of Workers' Compensation Medical Treatment Guidelines updating process was completed in several stages. Initially, current medical literature related to the guideline was systematically reviewed, critiqued, and graded by the Division and the multi-disciplinary Task Force. Next, appropriate medical evidence and consensus were incorporated concurrently into the Guideline, section by section. During this stage, Task Force members were appointed for projects, working in sub-groups or individually, according to the task.

Guideline updating processes and resources dedicated to supporting the Task Force included:

- Medical literature review and grading, with the assistance of a professional Research Methodologist
- Evidence and consensus parameters to assist in the revision and evaluation of treatment recommendations
- A multi-disciplinary Advisory Panel and other advisory bodies to provide clinical feedback to the Task Force and the Division
- Administrative support and coordination, allowing participants to focus on clinical issues
- Opportunities for members to provide feedback on ways to improve the update process

Selection of Task Force Members

Health care disciplines required to participate in the task force process were identified. Individuals selected were Level I or II Accredited Providers (if applicable), Board Certified in their area of specialty, in good standing within their medical specialty organization, and specialized in treatment of injured workers. Task force membership also included non-physician members of the workers' compensation system, such as: therapists, psychologists, attorneys, and risk managers. Prior task force participation was not necessary.

Grading Recommendations

Graded consensus recommendations were developed based on the considered judgment of the multi-disciplinary Task Force, which considered the volume and consistency of the evidence and the generalizability and clinical impact of the recommendations.

Rating Scheme for the Strength of the Recommendations

Grades of Recommendation

Some means the recommendation considered at least one adequate scientific study, which reported that a treatment was effective.

Good means the recommendation considered the availability of multiple adequate scientific studies or at least one relevant high-quality scientific study, which reported that a treatment was effective.

Strong means the recommendation considered the availability of multiple relevant and high quality scientific studies, which arrived at similar conclusions about the effectiveness of a treatment.

Cost Analysis

Published cost analyses were reviewed.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

Advisory Panel

The guideline update process included a subsequent additional review, conducted by an Advisory Panel and other advisory bodies consisting of past Task Force members and clinical experts representing medical specialty organizations and associations. Professionals representing adjunct aspects of patient care, such as Risk Managers, Case Managers, and Insurers, were also included in this stage. The purpose of the external review was to provide additional sources of expertise in order to finalize draft guideline material developed by the Task Force.

Solicitation of Public Commentary

An active, open process to solicit public commentary on a year-round basis is in place in order to maximize community-based physician input and support. Contact with Accredited Providers is done through direct mailings and at Accreditation seminars.

Following the Advisory Panel comments and public commentary, final edits were made and the guideline adopted.

Post Task Force Questionnaire

Not done for this particular guideline.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

Only randomized controlled trials or meta-analyses were used for evidence statements regarding treatment.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Optimal medical and functional outcomes for injured workers with complex regional pain syndrome/reflex sympathetic dystrophy

Potential Harms

- Injuries, side effects, or infections from therapeutic injections
- Side effects and drug interactions from medications
- Complications from operative procedures
- Injury from device or component failure

See specific sections of the original guideline document for detailed descriptions of potential harms.

Contraindications

Contraindications

See specific sections of the original guideline document for contraindications.

Qualifying Statements

Qualifying Statements

- In order to properly utilize this document, the reader should view the document in its entirety for context.
- This document has been prepared by the Colorado Department of Labor and Employment, Division of Workers' Compensation (Division) and should be interpreted within the context of guidelines for physicians/providers treating individuals qualifying under Colorado's Workers' Compensation Act as injured workers with complex regional pain syndrome (CRPS), formerly known as reflex sympathetic dystrophy (RSD).
- Although the primary purpose of this document is advisory and educational, these guidelines are enforceable under the Workers' Compensation Rules of Procedure, 7 CCR 1101-3. The Division recognizes that acceptable medical practice may include deviations from these guidelines, as individual cases dictate. Therefore, these guidelines are not relevant as evidence of a provider's legal standard of professional care.
- The Division provides procedures to implement medical treatment guidelines and to foster communication to resolve disputes among the provider, payer and patient through the Workers' Compensation Rules of Procedure. In lieu of more costly litigation, parties may wish to seek administrative dispute resolution services through the Division or the office of administrative courts.

Implementation of the Guideline

Description of Implementation Strategy

The principles summarized below are key to the intended implementation of all Division of Workers' Compensation guidelines and critical to the reader's application of the guidelines in the original guideline document.

1. Application of Guidelines. The Division provides procedures to implement medical treatment guidelines and to foster communication to resolve disputes among the provider, payer and patient through the Workers' Compensation Rules of Procedure. In lieu of more costly litigation, parties may wish to seek administrative dispute resolution services through the Division or the office of administrative courts.
2. Education. Education of the patient and family, as well as the employer, insurer, policy makers and the community should be the primary emphasis in the treatment of chronic pain injuries and disability. Currently, practitioners often think of education last, after medications, manual therapy, and surgery. Practitioners must develop and implement an effective strategy and skills to educate patients, employers, insurance systems, policy makers and the community as a whole. An education-based paradigm should always start with inexpensive communication providing reassuring information to the patient. More in-depth education currently exists within a treatment regime employing functional restorative and innovative programs of prevention and rehabilitation. No treatment plan is complete without addressing issues of individual and/or group patient education as a means of facilitating self-management of symptoms and prevention.
3. Treatment Parameter Duration. Time frames for specific interventions commence once treatments have been initiated, not on the date of injury. Obviously, duration will be impacted by patient compliance, as well as availability of services. Clinical judgment may substantiate the need to accelerate or decelerate the time frames discussed in the original guideline document.
4. Active Interventions. Active interventions emphasizing patient responsibility, such as therapeutic exercise and/or functional treatment, are generally emphasized over passive modalities, especially as treatment progresses. Generally, passive interventions are viewed as a means to facilitate progress in an active rehabilitation program with concomitant attainment of objective functional gains.
5. Active Therapeutic Exercise Program. Goals should incorporate patient strength, endurance, flexibility, coordination, and education. This includes functional application in vocational or community settings.
6. Positive Patient Response. Positive results are defined primarily as functional gains that can be objectively measured. Objective functional gains include, but are not limited to: positional tolerances, range-of-motion, strength, endurance, activities of daily living, ability to function at

work, cognition, psychological behavior, and efficiency/velocity measures that can be quantified. Subjective reports of pain and function should be considered and given relative weight when the pain has anatomic and physiologic correlation. Anatomic correlation must be based on objective findings.

7. Re-evaluation of Treatment Every 3 to 4 Weeks. If a given treatment or modality is not producing positive results within 3 to 4 weeks, the treatment should be either modified or discontinued. Reconsideration of diagnosis should also occur in the event of poor response to a seemingly rational intervention.
8. Surgical Interventions. Surgery should be contemplated within the context of expected functional outcome and not purely for the purpose of pain relief. The concept of "cure" with respect to surgical treatment by itself is generally a misnomer. All operative interventions must be based upon positive correlation of clinical findings, clinical course, and diagnostic tests. A comprehensive assimilation of these factors must lead to a specific diagnosis with positive identification of pathologic conditions.
9. Six-Month Time Frame. The prognosis drops precipitously for returning an injured worker to work once he/she has been temporarily totally disabled for more than six months. The emphasis within these guidelines is to move patients along a continuum of care and return-to-work within a six-month time frame, whenever possible. It is important to note that time frames may be less pertinent for injuries that do not involve work-time loss or are not occupationally related.
10. Return-to-Work. Return-to-work is therapeutic, assuming the work is not likely to aggravate the basic problem or increase long-term pain. The practitioner must provide specific written physical limitations and the patient should never be released to "sedentary" or "light duty." The following physical limitations should be considered and modified as recommended: lifting, pushing, pulling, crouching, walking, using stairs, overhead work, bending at the waist, awkward and/or sustained postures, tolerance for sitting or standing, hot and cold environments, data entry and other repetitive motion tasks, sustained grip, tool usage and vibration factors. Even if there is residual chronic pain, return-to-work is not necessarily contraindicated.

The practitioner should consider all of the physical demands of the patient's job position before returning the patient to full duty and should request clarification of the patient's job duties. Clarification should be obtained from the employer or if necessary, including, but not limited to: a healthcare professional with experience in ergonomics, an occupational health nurse, occupational therapist, vocational rehabilitation specialist, or an industrial hygienist.
11. Delayed Recovery. By definition, patients with complex regional pain syndrome will fit into the category of delayed recovery. All of these patients should have a psychological or psychiatric evaluation, if not previously provided as well as interdisciplinary rehabilitation or vocational goal setting. It is essential to address all barriers to recovery which might include issues related to psychosocial, personality, employment, litigation, and compensation. The Division recognizes that 3% to 10% of all industrially injured patients will not recover within the timelines outlined in the original guideline document despite optimal care. Such individuals may require treatments beyond the limits discussed within the original guideline document, but such treatment will require clear documentation by the authorized treating practitioner focusing on objective functional gains afforded by further treatment and impact upon prognosis.
12. Guideline Recommendations and Inclusion of Medical Evidence. Guidelines are recommendations based on available evidence and/or consensus recommendations. When possible, guideline recommendations will note the level of evidence supporting the treatment recommendation. When interpreting medical evidence statements in the guideline, the following apply:

Consensus means the opinion of experienced professionals based on general medical principles. Consensus recommendations are designated in the guideline as "generally well accepted," "generally accepted," "acceptable," or "well-established."

"Some" means the recommendation considered at least one adequate scientific study, which reported that a treatment was effective.

"Good" means the recommendation considered the availability of multiple adequate scientific studies or at least one relevant high-quality scientific study, which reported that a treatment was effective.

"Strong" means the recommendation considered the availability of multiple relevant and high quality scientific studies, which arrived at similar conclusions about the effectiveness of a treatment.

All recommendations in the guideline are considered to represent reasonable care in appropriately selected cases, regardless of the level of evidence attached to it. Those procedures considered inappropriate, unreasonable, or unnecessary are designated in the guideline as "not recommended."

13. Treatment of Preexisting Conditions. Conditions that preexisted the work injury/disease will need to be managed under two circumstances:
(a) A preexisting condition exacerbated by a work injury/disease should be treated until the patient has returned to their objectively verified prior level of functioning or maximum medical improvement (MMI); and (b) A preexisting condition not directly caused by a work injury/disease but which may prevent recovery from that injury should be treated until its objectively verified negative impact has been controlled. The focus of treatment should remain on the work injury/disease.

The guideline document should be interpreted within the parameters of these guideline principles that may lead to more optimal medical and

functional outcomes for injured workers.

Implementation Tools

Chart Documentation/Checklists/Forms

Foreign Language Translations

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Colorado Division of Workers' Compensation. Complex regional pain syndrome/reflex sympathetic dystrophy: medical treatment guidelines. Denver (CO): Colorado Division of Workers' Compensation; 2011 Dec 27. 107 p.

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 Dec 27

Guideline Developer(s)

Colorado Division of Workers' Compensation - State/Local Government Agency [U.S.]

Source(s) of Funding

Guideline Committee

Not stated

Composition of Group That Authored the Guideline

Not stated

Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the [Colorado Division of Workers' Compensation Web site](#) .

Availability of Companion Documents

The following are available:

- Chronic pain and complex regional pain syndrome update 2011. Search terms and general search strategy. Denver (CO): Colorado Division of Workers' Compensation. 2011. 2 p. Electronic copies: Available from the [Colorado Division of Workers' Compensation Web site](#) .
- Chronic pain and complex regional pain syndrome update 2011. Bibliography. Denver (CO): Colorado Division of Workers' Compensation. 2011. 46 p. Electronic copies: Available from the Colorado [Division of Workers' Compensation Web site](#) .

In addition, the following Desk Reference tools are available from the [Colorado Division of Workers' Compensation Web site](#)

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- Pain diagram
- Functional assessment for chronic pain (available in English and Spanish)
- Guidelines for prescribing controlled substances, including a sample patient contract in English and Spanish
- Psychological tests commonly used in the assessment of chronic pain
- Guidance for epidural spinal injections
- Blocks for sympathetically mediated pain
- Functional capacity evaluation explanation and consent form
- Task force supplement for functional capacity evaluation

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on November 27, 2012. The information was verified by the guideline developer on December 28, 2012. This summary was updated by ECRI Institute on October 28, 2013 following the U.S. Food and Drug Administration advisory on Acetaminophen. This summary was updated by ECRI Institute on September 18, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI Institute on June 2, 2016 following the U.S. Food and Drug Administration advisory on Opioid pain medicines.

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